

WHAT IS CLAIMED IS:

1. A method of communicating comprising:  
providing at least one interconnect hub;  
connecting the at least one interconnect hub to a  
5 plurality of audio connection devices to form a network  
of audio connection devices with the interconnect hub at  
the center of the network, wherein the audio connection  
devices connect to each other through the at least one  
interconnect hub; and  
10 synchronously transmitting data between at least two  
of the audio connection devices through the at least one  
interconnect hub.
2. The method of Claim 1, wherein synchronously  
15 transmitting data comprises transmitting a frame of data  
around the ring at a rate of 8KHz.
3. The method of Claim 3, wherein the interconnect  
hub comprises at least one second ring connecting the  
20 audio communications devices.

4. A communications system comprising a star network having a hub located at the center of the star network, the star network carrying a synchronous data stream.

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5. The system of Claim 4, wherein the hub comprises a ring connecting a plurality of network connections.

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6. The system of Claim 4, wherein the star network carries synchronous data at a rate of 8 KHz.

7. A digital, fiber optic switching and distribution system, comprising:

a fiber optic concentrated ring configured as a communication network to a plurality of signal sources;

5 a plurality of connection devices coupled to the fiber optic concentrated ring, each connection device receiving analog signals from at least one signal source and converting the received analog signals into digital data signals; and

10 a central hub coupled to the fiber optic concentrated ring and receiving digital signals for routing to the connection devices.

8. The digital, fiber optic switching and distribution system as in Claim 7 wherein the central hub comprises dual counter rotating fiber optic rings for single point failure protection.

9. The digital, fiber optic switching and distribution system as in Claim 7 wherein the fiber optic concentrated ring comprises a plurality of subloops equal in number to at least the plurality of connection devices, wherein each subloop couples to at least one of the connection devices.

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10. The digital, fiber optic switching and distribution system as in Claim 9 wherein the central hub comprises a plurality of ports individually coupled to a subloop of the fiber optic concentrated ring.

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12. A digital, fiber optic switching and distribution system as in Claim 11 wherein each of the plurality of control panels has access to each of the plurality of connection devices.

13. A digital, fiber optic switching and distribution system, comprising:

a fiber optic concentrated ring configured as a communications network to a plurality of signal sources;

5 a plurality of connection devices coupled to the fiber optic concentrated ring, each connection device receiving analog signals from at least one signal source and converting the received analog signals into digital data signals, each connection device comprises a digital  
10 signal processor for selective mixing of the signals received from the at least one signal source; and

a central hub coupled to the fiber optic concentrated ring and receiving the digital signals for routing to the connection devices, the central hub  
15 comprising a bus synchronizer for synchronizing the routing of data signals through the fiber optic concentrated ring.

14. The digital, fiber optic switching and  
20 distribution system as in Claim 13 wherein the central hub further comprises dual counter rotating fiber optic rings for single point failure protection.

15. The digital, fiber optic switching and  
25 distribution system as in Claim 13 wherein the fiber optic concentrated ring comprises a plurality of subloops equal in number to at least the plurality of connection devices.

16. The digital, fiber optic switching and distribution system as in Claim 15 wherein the central hub further comprises a plurality of ports individually coupled to a subloop of the fiber optic concentrated  
5 ring.

17. The digital, fiber optic switching and distribution system as in Claim 13 further comprising a plurality of control panels individually coupled to one  
10 of the plurality of connection devices.

18. The digital, fiber optic switching and distribution system as in Claim 17 wherein each of the plurality of control panels has access to each of the  
15 plurality of connection devices.

19. A digital, fiber optic switching and distribution system, comprising:

a first fiber optic concentrated ring configured as a communication network to a plurality of signal sources;

5 a first plurality of connection devices coupled to the first fiber optic concentrated ring, each of the first plurality of connection devices receiving analog signals from at least one signal source and converting the received analog signals into digital data signals;

10 a first central hub coupled to the first fiber optic concentrated ring and receiving the digital data signals for routing to the first plurality of connection devices;

a second fiber optic concentrated ring configured as a communication network to a plurality of signal sources;

15 a second plurality of connection devices coupled to the second fiber optic concentrated ring, each of the second plurality of connection devices receiving analog signals from at least one signal source and converting the received analog signals into digital data signals;

20 and

a second central hub coupled to the second fiber optic concentrated ring and receiving digital data signals for routing to the second plurality of connection devices, the second central hub coupled to the first  
25 central hub as a signal fiber optic switching and distribution system.

20. The digital, fiber optic switching and distribution system as in Claim 19 further comprising:

a plurality of additional fiber optic concentrated rings each configured as a communication network to a  
5 plurality of signal sources;

a plurality of additional pluralities of connection devices, each of the additional plurality of connection devices coupled to one of the additional fiber optic concentrated rings, each of the additional plurality of  
10 connection devices receiving analog signals from at least one signal source and converting the received analog signals into digital data signals; and

a plurality of additional central hubs individually coupled to one of the additional plurality of fiber optic concentrated rings and receiving digital data signals for  
15 routing to the connection devices, each additional central hub coupled to at least one central hub as a signal fiber optic switching and distribution system.

20 21. The digital, fiber optic switching and distribution system as in Claim 20 wherein the first and second central hubs each comprises dual counter-rotating fiber optic rings for a single point failure protection.

25 22. The digital, fiber optic switching and distribution system as in Claim 19 further comprising a first plurality of control panels individually coupled to one of the first plurality of connection devices; and a second plurality of control panels individually coupled  
30 to one of the second plurality of connection devices.



23. The digital, fiber optic switching and distribution system as in Claim 22 wherein each of the first and second plurality of control panels has access to each of the first and second plurality of connection  
5 devices.

24. The digital, fiber optic switching and distribution system as in Claim 19 wherein the first and second fiber optic concentrated rings each comprises a  
10 plurality of subloops equal in number to at least the plurality of first or second connection devices, respectively.

25. The digital, fiber optic switching and  
15 distribution system as in Claim 24 wherein the first and second central hubs each comprises a plurality of ports individually coupled to a subloop of the first or second fiber optic concentrated ring, respectively.

26. The digital, fiber optic switching and  
20 distribution system as in Claim 19 wherein each of the first and second plurality of connection devices comprises a digital signal processor for selective mixing of signals received from the at least one signal source.

